

Listing of Claims:

Claim 1. (Currently Amended) A key-pad device comprising:

a key-pad including a plurality of keys arranged in a plurality of rows and a plurality of columns; and

a key-pad controller providing a key value signal when one of the keys is activated, said controller determining which key is activated by a process including a predetermined number of steps comprising:

assigning each key a key press value;

determining if a key has been pressed in one of the columns;

advancing a counter by a counter value if a key has been pressed;

determining if a key has been pressed in a next column and adding the counter value to the counter if a key has been pressed, otherwise keeping this counter value the same;

adding the key press value of all the keys that had been pressed in a first row to generate a first row added key value;

adding the key press value of all the keys that have been pressed in a second row and adding the added key press values of the second row to the added key value;

determining whether the added key value exceeds a predetermined value;

transferring the key value from the key-pad device, if the added key value does not exceed the predetermined value;

comparing the added key value to a predetermined key value to determine if multiple keys had been pressed simultaneously; wherein the process has the same number of steps regardless of which key is activated, and wherein each key is assigned a predetermined key press value, said controller adding the key press values when the keys are pressed, and wherein the controller compares the added key value to a predetermined value to determine if multiple keys have been simultaneously pressed.

Claim 2. (Original) The device according to claim 1 further comprising a display and a magnetic strip reader.

Claim 3. (Cancelled)

Claim 4. (Cancelled)

Claim 5. (Currently Amended) The device according to claim [[4]] 1 wherein the controller adds a counter value to a counter if a key is activated in a column, and wherein the controller determines which column is being monitored for a key activation by a set bit in a digital word.

Claim 6. (Currently Amended) The device according to claim [[3]] 1 wherein the controller determines which key has been activated on a row-by-row basis.

Claim 7. Cancelled.

Claim 8. Cancelled.

Claim 9. (Previously Amended) The device according to claim 1 wherein the controller subtracts the added key value from a predetermined value to calculate a key value to be transmitted.

Claim 10. (Currently Amended) A key-pad device for transferring a key value representative of a key press to a terminal, said device comprising:

a key-pad including a plurality of keys arranged in a plurality of rows and a plurality of columns, ~~each key being assigned a key press value~~; and

a key-pad controller outputting the key value to the terminal when one of the keys is pressed, said controller determining the key that is pressed by a process including ~~a predetermined number of steps~~;

assigning each key a key press value;

determining if a key has been pressed in one of the columns;

advancing a counter by a counter value if a key has been pressed;

determining if the key has been pressed in a next column and adding the counter value to the counter if a key has been pressed, otherwise keeping the counter value the same;

adding the key press value of all the keys that have been pressed in a first row to generate a first row added key value;

adding the key press value of all the keys that have been pressed in a second row and adding the key press values of the second row to the added key value;

determining whether the added key value exceeds a predetermined value;

transferring the key value from the key-pad device if the added key value does not exceed a predetermined value; and

comparing the added key value to a predetermined key value to determine if multiple keys have been simultaneously pressed., where the number of steps is the same regardless of which key is pressed, said controller determining if more than one key has been pressed in more than one column, and then if only one key has been pressed, determining which key has been pressed on a row-by-row basis by adding the key press values for each key that is pressed, wherein the controller compares the added key press value to a predetermined value to determine if multiple keys in a column have been simultaneously pressed.

Claim 11. (Original) The device according to claim 10 wherein the controller adds a counter value to a counter if a key is pressed in a column, and wherein the controller determines that more than one key has been pressed in more than one column if the counter value in the counter is greater than a predetermined value.

Claim 12. (Original) The device according to claim 10 wherein the controller adds the key press value for each key pressed in a particular row before moving on to a next row.

Claim 13. Cancelled.

Claim 14. (Original) The device according to claim 10 wherein the controller subtracts the added key value from a predetermined value to determine the key value to be transmitted to the terminal.

Claim 15. (Previously Presented) A method for determining which key of a key-pad device having a plurality of keys arranged in a plurality of rows and a plurality of columns has been pressed, comprising:

- assigning each key a key press value;
- determining if a key has been pressed in one of the columns;
- advancing a counter by a counter value if a key has been pressed;
- determining if a key has been pressed in a next column and adding the counter value to the counter if a key has been pressed, otherwise keeping the counter value the same;
- adding the key press value of all of the keys that have been pressed in a first row to generate a first row added key value;
- adding the key press value of all of the keys that have been pressed in a second row and adding the added key press values of the second row to the added key value;
- determining whether the added key value exceeds a predetermined value;
- transferring the key value from the key-pad device if the added key value does not exceed the predetermined value; and
- comparing the added key value to a predetermined key value to determine if multiple keys have been simultaneously pressed.

Claim 16. (Original) The method according to claim 15 wherein the key-pad includes four rows and four columns, and wherein advancing the counter for each pressed key in each column is performed for all four columns, and wherein adding the key press values for all of the keys is performed for all four of the rows.

Claim 17. (Original) The method according to claim 15 further comprising subtracting the added key value from a predetermined value to calculate the key value that is transmitted.

Claim 18. (Original) The method according to claim 15 wherein determining if a key has been pressed in one of the columns includes setting a set bit for a particular column if a key has been pressed in that column.